AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method to package a Volume holographic filter, comprising the steps of:

recording a grating with a chirp on said filter;

modifying said grating recorded on said filter;

applying a mechanical constraint to said filter; and

altering a thermal expansion of said filter.

2. (originally filed) The method of claim 1 wherein said filter is a simple reflection grating filter.

3. (originally filed) The method of claim 1 wherein said filter is a slanted reflection grating filter.

4. (originally filed) The method of claim 1 wherein said filter is a transmission grating filter.

5. (originally filed) The method of claim 1 wherein said filter is a fixed volume holographic grating filter (VHG).

6. (originally filed) The method of claim 1 wherein said filter is holographically recorded using a phase mask.

7. (originally filed) The method of claim 1 wherein said filter is holographically recorded using a two-beam method.

8. (originally filed) The method of claim 1 wherein said filter is thermally compensated by means of a tube geometry.

9. (originally filed) The method of claim 1 wherein said mechanical constraint further comprising:
inducing a strain to tailor a thermal wavelength coefficient of said filter.

10. (originally filed) The method of claim 1 wherein said mechanical constraint further comprising:
clamping said filter by a clamp to a pre-set value such that said clamp controls said thermal expansion in a direction of said filter and wherein said filter is insensitive to a change in temperature.

11. (originally filed) The method of claim 1 wherein said mechanical constraint further comprising:
clamping said filter by a clamp to a pre-set value such that said clamp controls said thermal expansion in a direction of said filter and wherein said filter is modified by a change in temperature.

12. (originally filed) The method of claim 8 wherein said tube geometry further comprises a plurality of anisotropic tubes to minimize frictional forces along any boundary of said tubes.

13. (originally filed) The method of claim 12 wherein said plurality of anisotropic tubes are generated by wrapping a wire around said filter.

14. (originally filed) The method of claim 13 wherein said wire is not made from a homogenous material.

15. (originally filed) The method of claim 13 wherein said wire has a thickness that is not a fixed thickness.

16. (originally filed) The method of claim 13 wherein said wrapping of wire around said filter forms a layer whose thickness is not a fixed thickness.

17. (originally filed) The method of claim 13 wherein said wrapping of wire has a pitch that is not a fixed pitch.

18. (originally filed) The method of claim 13 wherein said wrapping of wire can be performed at any temperature.

19. (originally filed) The method of claim 12 wherein said plurality of anisotropic tubes are generated by stacking a plurality of washers, each of which have a same inner diameter opening.

20. (originally filed) The method of claim 19 wherein said plurality of washers are held together by a soft solder that physically yields at a low level so that each of said plurality of washers stabilizes and hence prevents a buckling failure.

21. (originally filed) The method of claim 20 wherein said soft solder has a stiffness level less than a stiffness level of each of said plurality of washers.

22. (originally filed) The method of claim 19 wherein a gap between each of said plurality of washers absorbs said thermal expansion such that center of each of said plurality of washers is independent of said thermal expansion.

23. (originally filed) The method of claim 22 wherein each of said plurality of washers has a thickness that is not a fixed thickness and said gap between them is not a fixed gap.

24. (originally filed) The method of claim 9 wherein said thermal wavelength coefficient is modified by a clamp arrangement comprising of a plurality of plates, a plurality of spacers, and a plurality of attaching means such that said filter is placed between a pair of spacers to form a stack which is in turn placed between a pair of plates that are pressed together by said plurality of attaching means at a temperature.

25. (originally filed) The method of claim 24 wherein said plurality of attaching means and said plurality of spacers are each made from a material with a negative expansion coefficient.

26. (originally filed) The method of claim 24 wherein said plurality of plates and said plurality of attaching means both have a first thermal coefficient of expansion and said plurality of spacers have a second thermal coefficient of expansion different from said first thermal coefficient of expansion.

27. (originally filed) The method of claim 26 wherein said first thermal coefficient of expansion is about 16 ppm/°C.

28. (originally filed) The method of claim 26 wherein said second thermal coefficient of expansion is about 0.5 ppm/°C.

29. (originally filed) The method of claim 5 wherein said filter is inserted into a substrate with a lower thermal expansion coefficient.

30. (originally filed) The method of claim 29 wherein said filter has a thermal wavelength coefficient dependant on said thermal expansion coefficient of substrate and said thermal expansion coefficient of filter, a stiffness of said filter and a stiffness of said substrate, and a geometry of said filter and a geometry of said substrate.

31. (originally filed) The method of claim 5 wherein said filter is bonded between a first and a second piece of substrate material wherein said first piece of substrate has a thermal expansion coefficient different from a thermal expansion coefficient of said second piece of substrate.

32. (originally filed) The method of claim 1 wherein recording said grating with a chirp is by a fixed amount determined by said filter.

33. (originally filed) The method of claim 1 wherein said package modifies said chirp with a change in temperature.

34. (originally filed) The method of claim 33 wherein said chirp is increased with an increase in said temperature.

35. (originally filed) The method of claim 33 wherein said chirp is increased with a decrease in said temperature.

36. (originally filed) The method of claim 33 wherein said chirp is decreased with an increase in said temperature.

37. (originally filed) The method of claim 33 wherein said chirp is decreased with a decrease in said temperature.

38. (currently amended) A method to package a Volume holographic filter, comprising the steps of:
recording a grating without a chirp on said filter;
applying a mechanical constraint to said filter; and
altering a thermal expansion of said filter.

39. (originally filed) The method of claim 38 wherein said filter is a simple reflection grating filter.

40. (originally filed) The method of claim 38 wherein said filter is a slanted reflection grating filter.

41. (originally filed) The method of claim 38 wherein said filter is a transmission grating filter.

42. (originally filed) The method of claim 38 wherein said filter is a fixed volume holographic grating filter (VHG).

43. (originally filed) The method of claim 38 wherein said filter is holographically recorded using a phase mask.

44. (originally filed) The method of claim 38 wherein said filter is holographically recorded using a two-beam method.

45. (originally filed) The method of claim 38 wherein said filter is thermally compensated by means of a tube geometry.

46. (originally filed) The method of claim 38 wherein said mechanical constraint further comprising:
inducing a strain to tailor a thermal wavelength coefficient of said filter.

47. (originally filed) The method of claim 38 wherein said mechanical constraint further comprising:
clamping said filter by a clamp to a pre-set value such that said clamp controls said thermal expansion in a direction of said filter and wherein said filter is insensitive to a change in temperature.

48. (originally filed) The method of claim 38 wherein said mechanical constraint further comprising:
clamping said filter by a clamp to a pre-set value such that said clamp controls said thermal expansion in a direction of said filter and wherein said filter is modified by a change in temperature.

49. (originally filed) The method of claim 45 wherein said tube geometry further comprises a plurality of anisotropic tubes to minimize frictional forces along any boundary of said tubes.

50. (originally filed) The method of claim 49 wherein said plurality of anisotropic tubes are generated by wrapping a wire around said filter.

51. (originally filed) The method of claim 50 wherein said wire is not made from a homogenous material.

52. (originally filed) The method of claim 50 wherein said wire has a thickness that is not a fixed thickness.

53. (originally filed) The method of claim 50 wherein said wrapping of wire around said filter forms a layer whose thickness is not a fixed thickness.

54. (originally filed) The method of claim 50 wherein said wrapping of wire has a pitch that is not a fixed pitch.

55. (originally filed) The method of claim 50 wherein said wrapping of wire can be performed at any temperature.

56. (originally filed) The method of claim 49 wherein said plurality of anisotropic tubes are generated by stacking a plurality of washers, each of which have a same inner diameter opening.

57. (originally filed) The method of claim 56 wherein said plurality of washers are held together by a soft solder that physically yields at a low level so that each of said plurality of washers stabilizes and hence prevents a buckling failure.

58. (originally filed) The method of claim 57 wherein said soft solder has a stiffness level less than a stiffness level of each of said plurality of washers.

59. (originally filed) The method of claim 56 wherein a gap between each of said plurality of washers absorbs said thermal expansion such that center of each of said plurality of washers is independent of said thermal expansion.

60. (originally filed) The method of claim 59 wherein each of said plurality of washers have a thickness that is not a fixed thickness and said gap between them is not a fixed gap.

61. (originally filed) The method of claim 46 wherein said thermal wavelength coefficient is modified by a clamp arrangement comprising of a plurality of plates, a plurality of spacers, and a plurality of attaching means such that said filter is placed between a pair of spacers to form a stack which is in turn placed between a pair of plates that are pressed together by said plurality of attaching means at a temperature.

62. (originally filed) The method of claim 61 wherein said plurality of attaching means and said plurality of spacers are each made from a material with a negative expansion coefficient.

63. (originally filed) The method of claim 61 wherein said plurality of plates and said plurality of attaching means both have a first thermal coefficient of expansion and said plurality

of spacers have a second thermal coefficient of expansion different from said first thermal coefficient of expansion.

64. (originally filed) The method of claim 63 wherein said first thermal coefficient of expansion is about 16 ppm/°C.

65. (originally filed) The method of claim 63 wherein said second thermal coefficient of expansion is about 0.5 ppm/°C.

66. (originally filed) The method of claim 42 wherein said filter is inserted into a substrate with a lower thermal expansion coefficient.

67. (originally filed) The method of claim 66 wherein said filter has a thermal wavelength coefficient dependant on said thermal expansion coefficient of substrate and said thermal expansion coefficient of filter, a stiffness of said filter and a stiffness of said substrate, and a geometry of said filter and a geometry of said substrate.

68. (originally filed) The method of claim 42 wherein said filter is bonded between a first and a second piece of substrate material wherein said first piece of substrate has a thermal expansion coefficient different from a thermal expansion coefficient of said second piece of substrate.

69. (originally filed) The method of claim 38 wherein said package causes said grating to become chirped with a change in temperature.

70. (originally filed) The method of claim 69 wherein said chirp is increased with an increase in said temperature.

71. (originally filed) The method of claim 69 wherein said chirp is increased with a decrease in said temperature.

72. (originally filed) The method of claim 69 wherein said chirp is decreased with an increase in said temperature.

73. (originally filed) The method of claim 69 wherein said chirp is decreased with an decrease in said temperature.

REMARKS/ARGUMENTS

Claims 1-73 remain in this application. Reconsideration and reexamination of pending claims 1-73 is respectfully requested.

In response to the Office Action mailed January 12, 2007, the Examiner's claim rejections have been considered. Applicants respectfully traverse all rejections regarding all pending claims and earnestly solicit allowance of these claims.

1. Claim Rejections under 35 U.S.C. § 102(b)

Claims 38,42,45,46,48,49,61,62 and 66-73 are rejected by the Examiner under 35 U.S.C. § 102(b) as being fully anticipated by Lemaire et. Al (US 6,147,341).

Applicant respectfully disagrees.